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***Parasikukia maculata*, a New Genus and New Species of Cyprinid Fish from Peninsular Thailand**

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Parasikukia maculata, a new genus and species of Cyprinidae, is described on the basis of two specimens collected from a small river in Phetchaburi Province, Thailand. The new form is similar to the species of *Sikukia* in having a deep body and adipose eyelids, but it differs from the latter in the cephalic lateral line system, the shape and number of gill rakers, the numbers of circumpeduncular scales and vertebrae, the position of the lateral line on the caudal peduncle, and the shape of the second hypural. *Parasikukia maculata* is unique among the small barbs of Southeast Asia in having a small, distinct, dark, saddle-shaped spot anterior to the origin of the dorsal fin.

Key Words: Cyprinidae, new genus, new species, *Parasikukia maculata*, Thailand.

In Southeast Asia there are five cyprinid genera with adipose eyelids, viz., *Aptosyax* Rainboth, 1991, *Albulichthys* Bleeker, 1859, *Amblyrhynchichthys* Bleeker, 1859, *Kalimantania* Bănărescu, 1980, and *Sikukia* Smith, 1931 (Weber and de Beaufort 1916; Smith 1945; Kottelat 1984; Kottelat *et al.* 1993).

In July 1990, I collected two cyprinid specimens with adipose eyelids from a stream in Phetchaburi Province, Thailand. The general appearance of these specimens is similar to that of the species of *Sikukia*. Subsequent comparisons of these specimens with *Sikukia* species indicated that the former apparently differ from *Sikukia* in many characters such as the cephalic lateral line system, counts of gill rakers and vertebrae, and the position of the lateral line on the caudal peduncle. I herein describe them as representing a new genus and species.

Methods

Measurements and counts follow Doi and Taki (1994). Vertebrae counts follow Doi and Kottelat (1998). Osteological characters were observed from soft x-ray negatives. The type specimens are deposited in the Department of Zoology, National Science Museum, Tokyo (NSMT).

Comparative material. *Sikukia gudgeri*: NSMT-P 58552, 2 specimens, 55.3–73.3 mm SL, Ubon Ratchathani, Mun River at Haad Sang, Thailand, 24 Sep. 1992. *Sikukia stejnegeri*: NSMT-P 58553, 5 specimens, 40.5–48.8 mm SL, Chai Nat, Chao

Phraya River at Chao Phraya Dam, Thailand, 15 Sep. 1992; NSMT-P 58554, 6 specimens, 38.0–48.8 mm SL, Nong Kai, Mekong River at Tha Bo, Thailand, 18 Sep. 1992.

***Parasikukia* gen. nov.**

Type species. *Parasikukia maculata* sp. nov.

Diagnosis. Body small, deep. Mouth sub-terminal, small with smooth lips and no barbels. Snout short, rounded. Eyes large with adipose eyelids. Supraorbital canal of cephalic lateral line system lacking 2 extension tubes on frontal. Fontanel absent. Gill rakers large, hook-shaped, coarsely set, 2 on upper limb, 2–3 on lower limb, 4–5 in total. Scales large, 31 scales in lateral line. Lateral line complete, originating from upper end of gill opening, running posteriorly on mid-body to caudal fin base, and then running on mid-caudal peduncle slightly below vertebral column. Dorsal fin with 4 simple and 8 branched rays. Last simple dorsal-fin ray osseous, with 12–13 serrae, posteriorly. Anal fin with 3 simple rays and 6 branched rays. Last simple anal-fin ray segmented and not osseous. Posterior tip of second hypural concave dorsally, articulating with one caudal-fin ray. Abdominal vertebrae 15+caudal vertebrae 15=total vertebrae 30.

Etymology. The generic name, *Parasikukia*, is derived from the close resemblance to the genus *Sikukia*, gender feminine.

***Parasikukia maculata* sp. nov.**

(Figs 1–3)

Type specimens. *Holotype*: NSMT-P 58550, 37.5 mm SL, small stream at Mone-liong, Khao Yoi, Phetchaburi Province, Thailand, 26 July 1990. *Paratype*: NSMT-P 58551, 1 ex, 34.1 mm SL, same data as holotype.

Description. Counts and measurements of the holotype are followed by those of the paratype in parentheses. All the measurements are given in Table 1.

Simple dorsal fin rays 4 (4); branched dorsal fin rays 8 (8); simple anal fin rays 3 (3); branched anal fin rays 6 (6); lateral line scales 29 (29)+scales on caudal fin 2 (2)=total lateral line scales 31 (31); predorsal scales 12 (12); scale rows above lateral line to origin of dorsal fin 5.5 (5.5); scale rows below lateral line to origin of anal fin 4.5 (3.5); scales below lateral line to insertion of pelvic fin 3.5 (3.5); circumpeduncular scales 14 (14); predorsal vertebrae 8 (8); preanal vertebrae 18 (18); abdominal vertebrae 15 (15)+caudal vertebrae 15 (15)=total vertebrae 30 (30).

Body deep, somewhat compressed, greatest depth at dorsal fin origin (Figs 1 and 2); its depth 2.4 (2.7) in SL, its width 6.7 (6.6) in SL. Caudal peduncle compressed, short, deep, its length 7.2 (6.5) in SL; its depth 6.3 (6.3) in SL.

Head high, large; its length 3.8 (3.6) in SL; its depth 4.4 (4.5) in SL. Snout rounded, short; its length 12.5 (12.9) in SL. Eye large, orbit diameter 1.2 (1.3) times as long as snout length. Adipose eyelid present (Fig. 3A). Supraorbital canal of cephalic lateral line system without two extension tubes on frontal (Fig. 3B). Fontanel absent. Mouth small, sub-inferior. Both lips thin lacking papillae. No barbels present. Gill rakers large, coarsely set, 2 (2) on upper limb, 2 (3) on lower limb, 4 (5) in total (Fig. 3C).

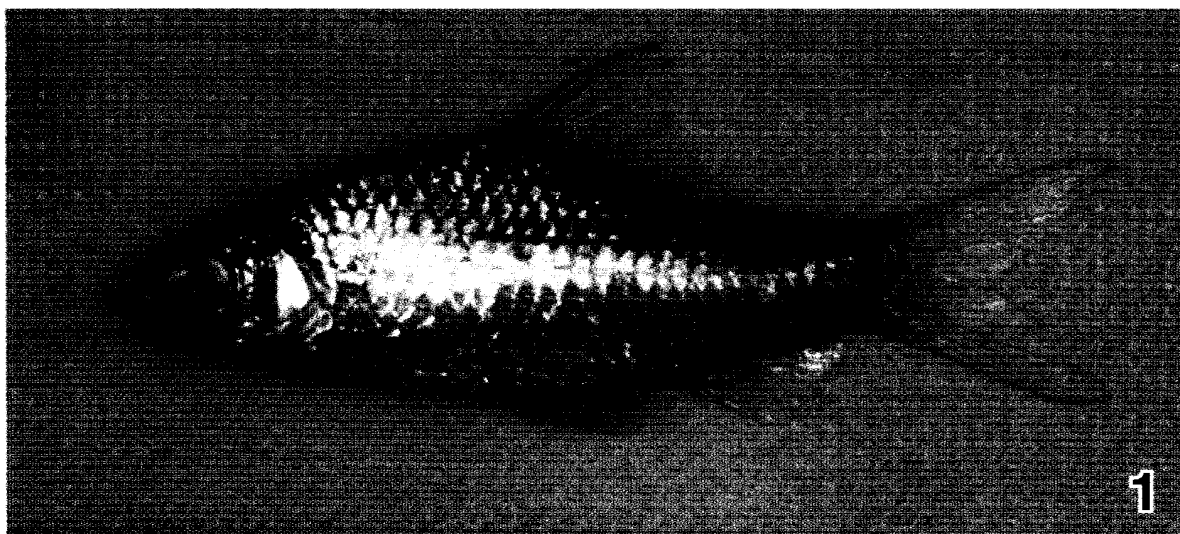


Fig. 1. *Parasikukia maculata* gen. et sp. nov., paratype, NSMT-P 58551, 34.1 mm SL, small stream at Moneliong, Khao Yoi, Phetchaburi Province, Thailand.

Fig. 2. *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550, 37.5 mm SL, small stream at Moneliong, Khao Yoi, Phetchaburi Province, Thailand.

Lateral line complete, originating from upper end of gill opening, running posteriorly on mid-body to caudal fin base, and then running on mid-caudal peduncle slightly below vertebral column (Fig. 3D).

Origin of dorsal fin slightly anterior to midpoint of standard length, its position above 9th (9th) lateral line scale. Predorsal length 1.8 (1.8) in SL. Origin of pelvic fin slightly posterior to vertical line through origin of dorsal fin, below 10th (10th) lateral line scale. Prepelvic length 1.9 (2.1) in SL. Origin of anal fin below 19th (19th) lateral line scale. Preanal length 1.3 (1.4) in SL. Last simple dorsal-fin ray osseous, with 13 (12) serrae. Last simple anal-fin ray segmented and not osseous. Length of last simple dorsal-fin ray 3.8 in SL in paratype (ray broken in holotype). Length of last simple anal-fin ray 6.5 in SL in paratype (ray broken in holotype). Pectoral fin longer than pelvic fin; pectoral fin length 4.8 (4.6) in SL, pelvic

Table 1. Measurements in mm of *Parasikukia maculata* gen. et sp. nov.

	Holotype NSMT-P 58550	Paratype NSMT-P 58551
Standard length	37.5	34.1
Head length	9.8	9.4
Head depth	8.5	7.6
Head width	6.3	5.6
Body depth	15.8	12.7
Body width	5.6	5.2
Caudal peduncle length	5.2	5.3
Caudal peduncle depth	5.9	5.4
Predorsal length	20.4	18.3
Preanal length	28.0	25.0
Prepelvic length	19.4	16.5
Length of last simple dorsal fin ray	—	9.0
Length of last simple anal fin ray	—	5.3
Pectoral fin length	7.8	7.4
Pelvic fin length	7.3	7.2
Length of upper lobe of caudal fin	13.5	11.7
Length of lower lobe of caudal fin	13.3	11.5
Snout length	3.0	2.7
Orbit diameter	3.5	3.5
Postorbital length	4.1	3.8
Interorbital width	4.0	3.7

fin length 5.2 (4.7) in SL. Caudal fin large; length of its upper lobe 2.8 (2.9) in SL, that of its lower lobe 2.8 (3.0) in SL. Distal part of second hypural concave dorsally, articulating with one caudal-fin ray (Fig. 3E).

Color when fresh (Fig. 1). Body silvery with small, distinct, dark, saddle-shaped spot anterior to origin of dorsal fin and small dark blotch on caudal peduncle. All fins grayish.

Color in alcohol (Fig. 2). Body light brown. Side of body with obscure, longitudinal, wide, dark stripe. Small, distinct, dark, saddle-shaped spot anterior to origin of dorsal fin (Fig. 3F). Small dark blotch present on caudal peduncle. All fins pale.

Habitat note. The river width was about 10 m, and the water depth was about 50 cm. The bottom was covered by mud and small stones.

Etymology. The name *maculata*, from the Latin for “spotted,” refers to the distinct, small, saddle-shaped spot in front of the origin of the dorsal fin.

Remarks. The new species most closely resembles the species *Sikukia* in having a deep body, adipose eyelids, large eyes, a short snout, a small mouth, and no barbels. The genus *Sikukia* contains two species, *S. gudgeri* (Smith, 1934) and *S. stejnegeri* Smith, 1931 (see Kottelat 1984). The genus *Parasikukia* is distinguished from *Sikukia* by the supraorbital canal of the cephalic lateral line system (two extension tubes on frontal absent in *Parasikukia* vs. present in *Sikukia*) (Fig. 3B), the shape and number of gill rakers (hook-shaped and 4–5 vs. plumose and 29–39), the number of circumpeduncular scales (14 vs. 16), the number of vertebrae (30 vs. 33), the position of the lateral line on the caudal peduncle (slightly below vs. at mid-

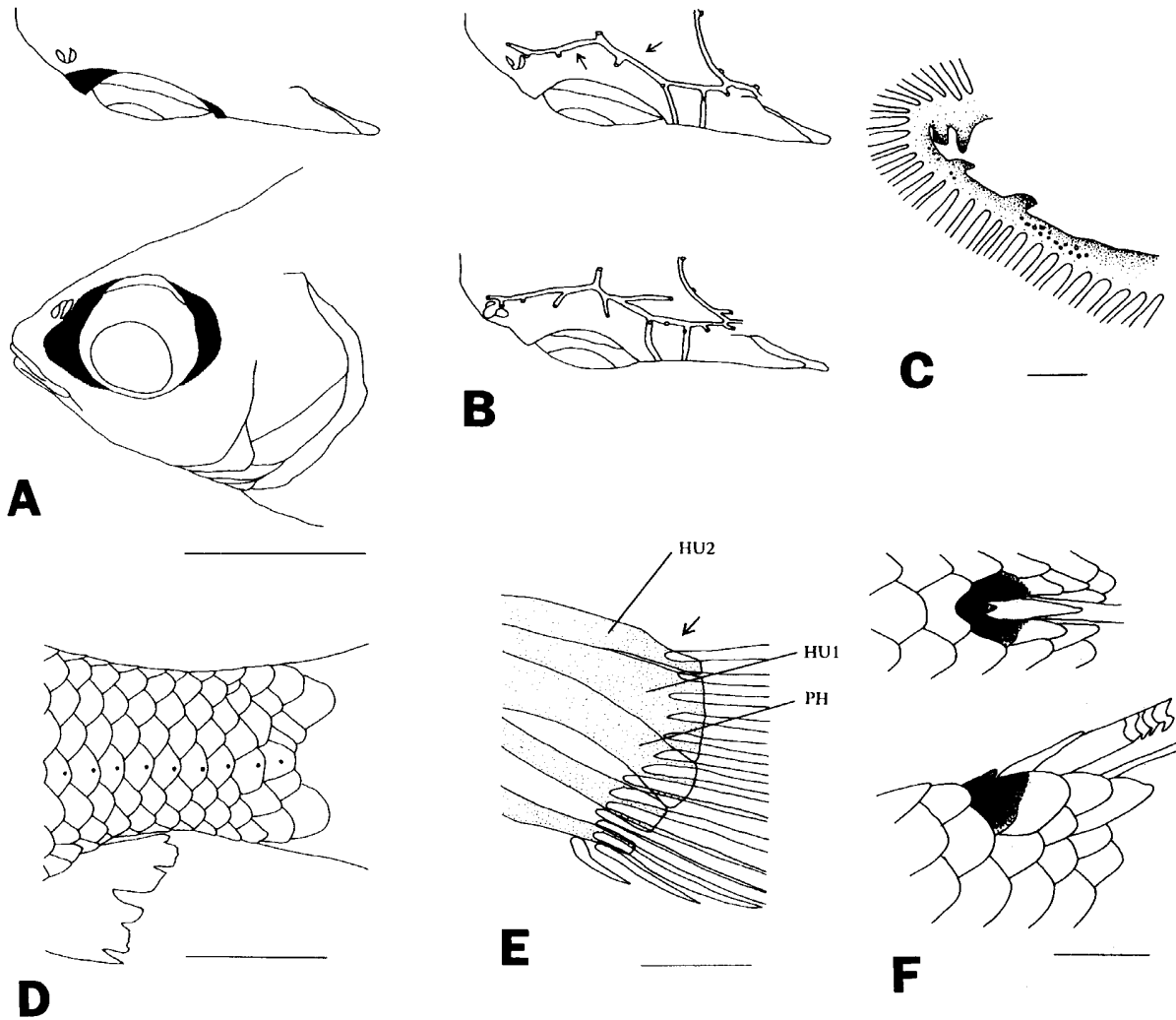


Fig. 3. A: Adipose eyelid of *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550, in dorsal view (above) and left lateral view (below). Scale bar 5 mm. B: Dorsal view of supra-orbital canal of cephalic lateral line system of *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550 (above) and *Sikukia gudgeri*, NSMT-P 58553 (below). Note the absence of two extension tubes in *P. maculata* at arrowed sites. C: Gill rakers of *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550. Scale bar 0.5 mm. D: Lateral line on caudal peduncle of *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550. Scale bar 5 mm. E: Lower part of caudal skeleton of *Parasikukia maculata* gen. et sp. nov., holotype, NSMT-P 58550, drawn from an x-ray photograph. HU, hypural; PH, parhypural. Arrow indicates concavity on second hypural. Scale bar 1 mm. F: Dark spot anterior to origin of dorsal fin of *Parasikukia maculata*, gen. et sp. nov., holotype, NSMT-P 58550. Dorsal view (above) and left lateral view (below). Scale bar 2 mm.

height), and the shape of the tip of the second hypural and the number of supported caudal fin rays there (with a concavity and one supporting ray vs. without a concavity and supporting two rays), plumose gill rakers are the strongest diagnostic character of *Sikukia* (Kottelat 1984), and the hook-shaped gill rakers of *Parasikukia maculata* are considerably different from those of *Sikukia*.

Parasikukia maculata is unique among the small barbs of Southeast Asia in

having a small, distinct, dark, saddle-shaped spot anterior to the origin of the dorsal fin (Fig. 3F). Some species of *Puntius*, e.g., *P. aurotaeniatus* (Tirant, 1885), *P. binotatus* (Valenciennes in Cuvier and Valenciennes, 1842), *P. sealei* (Herre, 1933), and *P. orphoides* (Valenciennes in Cuvier and Valenciennes, 1842), also have small spots near the origin of the dorsal fin, but in all these spots are at, not before, the origin of the dorsal fin, and they take the form of two spots, not jointed medially.

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References

- Bănărescu, P. 1980. *Kalimantania* and *Neobarynotus*, two new Indonesian genera of minnows (Pisces, Cyprinidae). *Travaux du Muséum d'Histoire Naturelle Grigore Antipa* 22: 471–478.
- Bleeker, P. 1859. *Conspectus systematis Cyprinorum*. *Natuurkundig Tijdschrift voor Nederlandsch-indie* 20: 421–441.
- Cuvier, G. and Valenciennes, A. 1842. *Histoire Naturelle des Poissons*. Vol. 16. Paris-Strasbourg, 472pp., pls 456–487.
- Doi, A. and Taki, Y. 1994. A new cyprinid fish, *Hampala salweenensis*, from the Mae Pai River system, Salween basin, Thailand. *Japanese Journal of Ichthyology* 40: 405–412.
- Doi, A. and Kottelat, M. 1998. *Hemimyzon nanensis*, a new balitorid fish from the Chao Phraya basin, Thailand. *Ichthyological Research* 45: 7–11.
- Herre, A. W. C. T. 1933. A check list of fishes from Sandakan, British North Borneo. *Journal of the Pan-Pacific Research Institution* 8: 2–5.
- Kottelat, M. 1984. *Notulae ichthyologiae orientalis*. V. A synopsis of the oriental cyprinid genus *Sikukia*. VI. Status of the Kampuchea cyprinid *Albulichthys krempfi*. *Revue Suisse de Zoologie* 91: 953–958.
- Kottelat, M., Whitten, A. J., Kartikasari, S. N. and Wirjoatmod, S. 1993. *Freshwater Fishes of Western Indonesia and Sulawesi*. Periplus, Hong Kong, 221pp., 84 pls.
- Rainboth, W. J. 1991. *Aptosyax grypus*, a new genus and species of large piscivorous cyprinids from the middle Mekong River. *Japanese Journal of Ichthyology* 38: 231–237.
- Smith, H. M. 1931. *Sikukia stejneri*, a new genus and species of freshwater cyprinoid fishes from Siam. *Copeia* 1931: 138–139.
- Smith, H. M. 1945. The fresh-water fishes of Siam, or Thailand. *United States National Museum Bulletin* 188: xi+1–622, pls 1–9.
- Tirant, G. 1885. Notes sur les poissons de la Basse-Cochinchine et du Cambodge. *Excursions et Reconnaissances* 10: 91–198.
- Weber, M. and de Beaufort, L. F. 1916. *The Fishes of the Indo-Australian Archipelago. III. Ostariophysii: II Cyprinoidea, Apodes, Synbranchi*. Brill, Leiden, 455pp.